as disclosed in the accompanying claims.

INDUSTRIAL APPLICABILITY

As described above in detail, the inventive transformed microorganisms expressing the parvovirus antigen protein on their surface, and the antigen protein extracted and purified from the microorganisms, can be used as a vaccine for the prevention of parvovirus. Particularly, the inventive recombinant bacterial strains expressing the parvovirus antigen allow producing mucosa vaccines for oral and rhinal administration economically.

BUDAPEST TREATY ON THE INTERNATIONAL RECOGNITION OF THE DEPOSIT OF MICROORGANISMS FOR THE PURPOSE OF PATENT PROCEDURE

INTERNATIONAL FORM

RECEIPT IN THE CASE OF AN ORIGINAL DEPOSIT

issued pursuant to Rule 7.1

TO : SUNG, Moon-Hee
Bioleaders corp.,
#408-1, Sajung-dong, Jung-gu, Daejeon 301-212,
Republic of Korea

I. IDENTIFICATION OF THE MICROORGANISM

Identification reference given by the DEPOSITOR:	Accession number given by the INTERNATIONAL DEPOSITARY AUTHORITY:
Escherichia coli **JM83/pHCE2LB:pgsA-VP2**	**KCTC 10590BP**

II. SCIENTIFIC DESCRIPTION AND/OR PROPOSED TAXONOMIC DESIGNATION

The microorganism identified under I above was accompanied by:
[x] a scientific description
[ ] a proposed taxonomic designation
(Mark with a cross where applicable)

III. RECEIPT AND ACCEPTANCE

This International Depositary Authority accepts the microorganism identified under I above, which was received by it on **January 31 2004.**

IV. RECEIPT OF REQUEST FOR CONVERSION

The microorganism identified under I above was received by this International Depositary Authority on and a request to convert the original deposit to a deposit under the Budapest Treaty was received by it on

V. INTERNATIONAL DEPOSITARY AUTHORITY

Name: **Korean Collection for Type Cultures** Address: Korea Research Institute of Bioscience and Biotechnology (KRIBB) #52, Oun-dong, Yusong-ku, Taejon 305-333, Republic of Korea	Signature(s) of person(s) having the power to represent the International Depositary Authority of authorized official(s): PARK, Yong-Ha Director Date: **February 06 2004**

THE CLAIMS

What is Claimed is:

1. A surface expression vector comprising at least one gene selected from the group consisting of pgsB, pgsC and pgsA genes encoding a poly-gamma-glutamate synthetase complex, and a gene encoding a parvovirus capsid antigen protein selected from the group consisting of VP2-1, VP2-2 and VP2.

2. The expression vector according to claim 1, wherein the vector is pHCE2LB:pgsA:CVP2-1, pHCE2LB:pgsA:VP2-2 or pHCE2LB:pgsA:VP2.

3. A microorganism transformed with the expression vector of claim 1 or 2.

4. The transformed microorganism according to claim 3, wherein the microorganism is selected from the group consisting of *E. coli., Salmonella typhi, Salmonella Typhimurium, Vibrio cholerae, Mycobacterium bovis, shigella, Bacillus,* lactic acid bacteria, *Staphylococcus, Listeria monocytogenes* and *Streptococcus*.

5. The transformed microorganism according to claim 4, wherein the microorganism is lactic acid bacteria.

6. A method for preparing a parvovirus capsid antigen protein, wherein the method comprises the steps of culturing the transformed microorganisms of claim 3, and then expressing the parvovirus capsid antigen protein on the surface of the microorganisms.

7. A vaccine for the prevention of parvovirus, containing the capsid antigen protein prepared by the method of claim 6 as an effective ingredient.

8. The vaccine according to claim 7, wherein the antigen protein is an expressed form on the surface of the microorganism, a crudely extracted form, or a purified form.

9. The vaccine according to claim 7, wherein the vaccine is administered orally or ingested as food.

10. The vaccine according to claim 7, wherein the vaccine is for hypodermic or celiac injection.

11. The vaccine according to claim 7, wherein the vaccine is for rhinal administration.

12. The vaccine according to claim 7, wherein the vaccine is used for the prevention of canine parvovirus infection and feline panleukopenia.

13. A method for preparing a parvovirus capsid antigen protein, wherein the method comprises the steps of culturing the transformed lactic acid bacteria of claim 5, and then expressing the parvovirus capsid antigen protein on the surface of the lactic acid bacteria.

14. A lactic acid bacteria produced by the method of claim 13, comprising a parvovirus capsid antigen protein expressed on their surface.

15. A vaccine for the prevention of parvovirus, containing the lactic acid bacteria of claim 14, a capsid antigen protein extracted from the lactic acid bacteria, or a capsid antigen protein purified from the lactic acid bacteria, as an effective ingredient.

16. The vaccine according to claim 15, wherein the vaccine is administered orally or ingested as food.

17. The vaccine according to claim 15, wherein the vaccine is for the prevention of canine parvovirus infection and feline panleukopenia.

18. A feedstuff additive for the prevention of parvovirus containing the microorganism of claim 3 or a parvovirus capsid antigen protein obtained by culturing the microorganisms, as an effective ingredient.

19. A feedstuff additive for the prevention of parvovirus containing the lactic acid bacteria of claim 14 or a parvovirus capsid antigen protein obtained by culturing the lactic acid bacteria, as an effective ingredient.

20. A preparation for the prevention of parvovirus containing the microorganism of claim 3 or a parvovirus capsid antigen protein obtained by culturing the microorganisms, as an effective ingredient.